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NEWS 7 FEB 27 New STN AnaVist pricing effective March 1, 2006
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NEWS 14 APR 12 Improved structure highlighting in FQHIT and QHIT display in MARPAT
NEWS 15 APR 12 Derwent World Patents Index to be reloaded and enhanced during second quarter; strategies may be affected
NEWS 16 MAY 10 CA/CAplus enhanced with 1900-1906 U.S. patent records
NEWS 17 MAY 11 KOREAPAT updates resume
NEWS 18 MAY 19 Derwent World Patents Index to be reloaded and enhanced
NEWS 19 MAY 30 IPC 8 Rolled-up Core codes added to CA/CAplus and USPATFULL/USPAT2
NEWS 20 MAY 30 The F-Term thesaurus is now available in CA/CAplus
NEWS 21 JUN 02 The first reclassification of IPC codes now complete in INPADOC

NEWS EXPRESS FEBRUARY 15 CURRENT VERSION FOR WINDOWS IS V8.01a, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 19 DECEMBER 2005. V8.0 AND V8.01 USERS CAN OBTAIN THE UPGRADE TO V8.01a AT <http://download.cas.org/express/v8.0-Discover/>

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=> e laffend, l/au

·E1	4	LAFFEND LISA A/AU
E2	8	LAFFEND LISA ANNE/A
E3	0	--> LAFFEND, L/AU
E4	1	LAFFENETRE O/AU
E5	4	LAFFER B G/AU
E6	22	LAFFER C/AU
E7	63	LAFFER C L/AU
E8	2	LAFFER CHERYL/AU
E9	29	LAFFER CHERYL L/AU
E10	2	LAFFER H E/AU
·E11	8	LAFFER J/AU
E12	3	LAFFER J L/AU

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L1 4 "LAFFEND LISA A"/AU
=> s e2
L2 8 "LAFFEND LISA ANNE"/AU
=> d 11

L1 ANSWER 1 OF 4 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
AN 2003:129736 BIOSIS
DN PREV200300129736
TI Process for the biological production of 1,3-propanediol with high titer.
AU Emptage, Mark [Inventor, Reprint Author]; Haynie, Sharon L. [Inventor];
Laffend, Lisa A. [Inventor]; Pucci, Jeff P. [Inventor]; Whited,
Gregory [Inventor]
CS Wilmington, DE, USA
ASSIGNEE: E. I. du Pont de Nemours and Company
PI US 6514733 20030204
SO Official Gazette of the United States Patent and Trademark Office Patents,
(Feb 4 2003) Vol. 1267, No. 1. <http://www.uspto.gov/web/menu/patdata.html>.
e-file.
ISSN: 0098-1133 (ISSN print).
DT Patent
LA English
ED Entered STN: 5 Mar 2003
Last Updated on STN: 5 Mar 2003

=> d 11 ti abs ibib tot

L1 ANSWER 1 OF 4 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
TI Process for the biological production of 1,3-propanediol with high titer.
AB The present invention provides an improved method for the biological
production of 1,3-propanediol from a fermentable carbon source in a single
microorganism. In one aspect of the present invention, an improved
process for the conversion of glucose to 1,3-propanediol is achieved by
the use of an *E. coli* transformed with the *Klebsiella pneumoniae* dha
regulon genes dhaR, orfY, dhaT, orfX, orfW, dhaB1, dhaB2, dhaB3, and orfz,
all these genes arranged in the same genetic organization as found in wild
type *Klebsiella pneumoniae*. In another aspect of the present invention,
an improved process for the production of 1,3-propanediol from glucose
using a recombinant *E. coli* containing genes encoding a G3PDH, a G3P
phosphatase, a dehydratase, and a dehydratase reactivation factor compared
to an identical process using a recombinant *E. coli* containing genes
encoding a G3PDH, a G3P phosphatase, a dehydratase, a dehydratase
reactivation factor and a 1,3-propanediol oxidoreductase (dhaT). The
dramatically improved process relies on the presence in *E. coli* of a gene
encoding a non-specific catalytic activity sufficient to convert
3-hydroxypropionaldehyde to 1,3-propanediol.

ACCESSION NUMBER: 2003:129736 BIOSIS
DOCUMENT NUMBER: PREV200300129736
TITLE: Process for the biological production of 1,3-propanediol
with high titer.
AUTHOR(S): Emptage, Mark [Inventor, Reprint Author]; Haynie, Sharon L.
[Inventor]; Laffend, Lisa A. [Inventor]; Pucci,
Jeff P. [Inventor]; Whited, Gregory [Inventor]
CORPORATE SOURCE: Wilmington, DE, USA
ASSIGNEE: E. I. du Pont de Nemours and Company
PATENT INFORMATION: US 6514733 20030204
SOURCE: Official Gazette of the United States Patent and Trademark
Office Patents, (Feb 4 2003) Vol. 1267, No. 1.
<http://www.uspto.gov/web/menu/patdata.html>. e-file.
ISSN: 0098-1133 (ISSN print).
DOCUMENT TYPE: Patent

LANGUAGE: English
ENTRY DATE: Entered STN: 5 Mar 2003
Last Updated on STN: 5 Mar 2003

L1 ANSWER 2 OF 4 USPATFULL on STN

TI Process for the biological production of 1,3-propanediol with high titer
AB The present invention provides an improved method for the biological production of 1,3-propanediol from a fermentable carbon source in a single microorganism. In one aspect of the present invention, an improved process for the conversion of glucose to 1,3-propanediol is achieved by the use of an *E. coli* transformed with the *Klebsiella pneumoniae* dha regulon genes dhaR, orfY, dhaT, orfX, orfW, dhaB1, dhaB2, dhaB3, and orfZ, all these genes arranged in the same genetic organization as found in wild type *Klebsiella pneumoniae*. In another aspect of the present invention, an improved process for the production of 1,3-propanediol from glucose using a recombinant *E. coli* containing genes encoding a G3PDH, a G3P phosphatase, a dehydratase, and a dehydratase reactivation factor compared to an identical process using a recombinant *E. coli* containing genes encoding a G3PDH, a G3P phosphatase, a dehydratase, a dehydratase reactivation factor and a 1,3-propanediol oxidoreductase (dhaT). The dramatically improved process relies on the presence in *E. coli* of a gene encoding a non-specific catalytic activity sufficient to convert 3-hydroxypropionaldehyde to 1,3-propanediol.

ACCESSION NUMBER: 2006:144073 USPATFULL
TITLE: Process for the biological production of 1,3-propanediol with high titer
INVENTOR(S): Emptage, Mark, Wilmington, DE, UNITED STATES
Haynie, Sharon L., Philadelphia, PA, UNITED STATES
Laffend, Lisa A., Claymont, DE, UNITED STATES
Pucci, Jeff P., Pacifica, CA, UNITED STATES
Whited, Gregory Marshall, Belmont, CA, UNITED STATES

NUMBER	KIND	DATE
US 2006121588	A1	20060608
US 2006-282993	A1	20060213 (11)
RELATED APPLN. INFO.:	Division of Ser. No. US 2002-277249, filed on 21 Oct 2002, PENDING Division of Ser. No. US 2000-641652, filed on 18 Aug 2000, GRANTED, Pat. No. US 6514733	

NUMBER	DATE
US 1999-149534P	19990818 (60)
PRIORITY INFORMATION:	
DOCUMENT TYPE:	Utility
FILE SEGMENT:	APPLICATION
LEGAL REPRESENTATIVE:	E I DU PONT DE NEMOURS AND COMPANY, LEGAL PATENT RECORDS CENTER, BARLEY MILL PLAZA 25/1128, 4417 LANCASTER PIKE, WILMINGTON, DE, 19805, US
NUMBER OF CLAIMS:	6
EXEMPLARY CLAIM:	1-24
NUMBER OF DRAWINGS:	6 Drawing Page(s)
LINE COUNT:	3706

L1 ANSWER 3 OF 4 USPATFULL on STN

TI Process for the biological production of 1,3-propanediol with high titer
AB The present invention provides an improved method for the biological production of 1,3-propanediol from a fermentable carbon source in a single microorganism. In one aspect of the present invention, an improved process for the conversion of glucose to 1,3-propanediol is achieved by the use of an *E. coli* transformed with the *Klebsiella pneumoniae* dha regulon genes dhaR, orfY, dhaT, orfX, orfW, dhaB1, dhaB2,

dhaB3, and orfZ, all these genes arranged in the same genetic organization as found in wild type *Klebsiella pneumoniae*. In another aspect of the present invention, an improved process for the production of 1,3-propanediol from glucose using a recombinant *E. coli* containing genes encoding a G3PDH, a G3P phosphatase, a dehydratase, and a dehydratase reactivation factor compared to an identical process using a recombinant *E. coli* containing genes encoding a G3PDH, a G3P phosphatase, a dehydratase, a dehydratase reactivation factor and a 1,3-propanediol oxidoreductase (dhaT). The dramatically improved process relies on the presence in *E. coli* of a gene encoding a non-specific catalytic activity sufficient to convert 3-hydroxypropionaldehyde to 1,3-propanediol.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2003:225862 USPATFULL
TITLE: Process for the biological production of 1,3-propanediol with high titer
INVENTOR(S): Emptage, Mark, Wilmington, DE, UNITED STATES
Haynie, Sharon L., Philadelphia, PA, UNITED STATES
Laffend, Lisa A., Claymont, DE, UNITED STATES
Pucci, Jeff P., Pacifica, CA, UNITED STATES
Whited, Gregory Marshall, Belmont, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003157674	A1	20030821
APPLICATION INFO.:	US 2002-277249	A1	20021021 (10)
RELATED APPLN. INFO.:	Division of Ser. No. US 2000-641652, filed on 18 Aug 2000, PENDING		

	NUMBER	DATE
PRIORITY INFORMATION:	US 1999-149534P	19990818 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	E I DU PONT DE NEMOURS AND COMPANY, LEGAL PATENT RECORDS CENTER, BARLEY MILL PLAZA 25/1128, 4417 LANCASTER PIKE, WILMINGTON, DE, 19805	
NUMBER OF CLAIMS:	29	
EXEMPLARY CLAIM:	1	
LINE COUNT:	3915	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L1 ANSWER 4 OF 4 USPATFULL on STN

TI Process for the biological production of 1,3-propanediol with high titer
AB The present invention provides an improved method for the biological production of 1,3-propanediol from a fermentable carbon source in a single microorganism. In one aspect of the present invention, an improved process for the conversion of glucose to 1,3-propanediol is achieved by the use of an *E. coli* transformed with the *Klebsiella pneumoniae* dha regulon genes dhaR, orfY, dhaT, orfX, orfW, dhaB1, dhaB2, dhaB3, and orfZ, all these genes arranged in the same genetic organization as found in wild type *Klebsiella pneumoniae*. In another aspect of the present invention, an improved process for the production of 1,3-propanediol from glucose using a recombinant *E. coli* containing genes encoding a G3PDH, a G3P phosphatase, a dehydratase, and a dehydratase reactivation factor compared to an identical process using a recombinant *E. coli* containing genes encoding a G3PDH, a G3P phosphatase, a dehydratase, a dehydratase reactivation factor and a 1,3-propanediol oxidoreductase (dhaT). The dramatically improved process relies on the presence in *E. coli* of a gene encoding a non-specific catalytic activity sufficient to convert 3-hydroxypropionaldehyde to 1,3-propanediol.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
ACCESSION NUMBER: 2003:33323 USPATFULL
TITLE: Process for the biological production of
1,3-propanediol with high titer
INVENTOR(S): Emptage, Mark, Wilmington, DE, United States
Haynie, Sharon L., Philadelphia, PA, United States
Laffend, Lisa A., Claymont, DE, United States
Pucci, Jeff P., Pacifica, CA, United States
Whited, Gregory, Belmont, CA, United States
PATENT ASSIGNEE(S): E. I. du Pont de Nemours and Company, Wilmington, DE,
United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6514733	B1	20030204
APPLICATION INFO.:	US 2000-641652		20000818 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 1999-149534P	19990818 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	GRANTED	
PRIMARY EXAMINER:	Prouty, Rebecca E.	
ASSISTANT EXAMINER:	Walicka, Malgorzata A	
NUMBER OF CLAIMS:	6	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	6 Drawing Figure(s); 6 Drawing Page(s)	
LINE COUNT:	3730	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

=> d 12 ti abs ibib tot

L2 ANSWER 1 OF 8 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
TI Bioconversion of a fermentable carbon source to 1,3-propanediol by a
single microorganism.
AB A process is provided for the bioconversion of a carbon substrate to
1,3-propanediol by a single organism utilizing either microorganisms
containing the genes encoding for an active glycerol or diol dehydratase
enzyme by contacting these organisms with a carbon substrate under the
appropriate fermentation conditions.
ACCESSION NUMBER: 2000:361176 BIOSIS
DOCUMENT NUMBER: PREV200000361176
TITLE: Bioconversion of a fermentable carbon source to
1,3-propanediol by a single microorganism.
AUTHOR(S): Laffend, Lisa Anne [Inventor, Reprint author];
Nagarajan, Vasanth [Inventor]; Nakamura, Charles Edwin
[Inventor]
CORPORATE SOURCE: Wilmington, DE, USA
ASSIGNEE: E. I. du Pont de Nemours and Company; Genencor
International Inc.
PATENT INFORMATION: US 6025184 20000215
SOURCE: Official Gazette of the United States Patent and Trademark
Office Patents, (Feb. 15, 2000) Vol. 1231, No. 3. e-file.
CODEN: OGUPE7. ISSN: 0098-1133.
DOCUMENT TYPE: Patent
LANGUAGE: English
ENTRY DATE: Entered STN: 23 Aug 2000
Last Updated on STN: 8 Jan 2002

L2 ANSWER 2 OF 8 HCAPLUS COPYRIGHT 2006 ACS on STN
TI Method for identifying the source of carbon in 1,3-propanediol

AB A new polypropylene terephthalate composition is provided. The polypropylene terephthalate is comprised of 1,3-propanediol and terephthalate. The 1,3-propanediol is produced by the bioconversion of a fermentable carbon source, preferably glucose. The resulting polypropylene terephthalate is distinguished from petrochem. produced polymer on the basis of dual carbon-isotopic fingerprinting which indicates both the source and the age of the carbon.

ACCESSION NUMBER: 2002:587641 HCPLUS
DOCUMENT NUMBER: 137:140905
TITLE: Method for identifying the source of carbon in 1,3-propanediol
INVENTOR(S): Burch, Robert R.; Dorsch, Robert R.; **Laffend**, **Lisa Anne**; Nagarajan, Vasantha; Nakamura, Charles
PATENT ASSIGNEE(S): E. I. Du Pont de Nemours & Co., USA; Genencor International, Inc.
SOURCE: U.S., 27 pp., Cont.-in-part of U.S. 6,025,184.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6428767	B1	20020806	US 1999-369796	19990806
US 5686276	A	19971111	US 1995-440293	19950512
IL 130789	A1	20020421	IL 1996-130789	19960507
US 6025184	A	20000215	US 1997-966794	19971110
WO 2001011070	A2	20010215	WO 2000-US21459	20000807
WO 2001011070	A3	20010830		
			W: BR, CA, CN, ID, IN, JP, KR, MX, SG, TR	
			RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE	
EP 1222303	A2	20020717	EP 2000-952572	20000807
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY			
US 2003082756	A1	20030501	US 2002-213203	20020805
PRIORITY APPLN. INFO.:			US 1995-440293	A3 19950512
			US 1997-966794	A2 19971110
			IL 1996-118169	A3 19960507
			US 1999-369796	A 19990806
			WO 2000-US21459	W 20000807

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 3 OF 8 HCPLUS COPYRIGHT 2006 ACS on STN
TI 1,3-Propanediol and polymer derivatives from a fermentable carbon source
AB A new polypropylene terephthalate composition is provided. The polypropylene terephthalate is comprised of 1,3-propanediol and terephthalate. The 1,3-propanediol is produced by the bioconversion of a fermentable carbon source, preferably glucose. The resulting polypropylene terephthalate is distinguished from petrochem. produced polymer on the basis of dual carbon-isotopic fingerprinting, which indicates both the source and the age of the carbon. Thus, *Escherichia coli* transformed with the dha regulon of *Klebsiella pneumoniae*, was able to produce 8.1-10.9 g/L 1,3-propanediol. This biol. produced monomer was then used to produce polypropylene terephthalate.

ACCESSION NUMBER: 2001:115315 HCPLUS
DOCUMENT NUMBER: 134:162002
TITLE: 1,3-Propanediol and polymer derivatives from a fermentable carbon source
INVENTOR(S): Burch, Robert R.; Dorsch, Robert R.; **Laffend**, **Lisa Anne**; Nagarajan, Vasantha; Nakamura, Charles

PATENT ASSIGNEE(S): E. I. Du Pont de Nemours & Co., USA
 SOURCE: PCT Int. Appl., 51 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 3
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001011070	A2	20010215	WO 2000-US21459	20000807
WO 2001011070	A3	20010830		
	W: BR, CA, CN, ID, IN, JP, KR, MX, SG, TR RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE			
US 6428767	B1	20020806	US 1999-369796	19990806
EP 1222303	A2	20020717	EP 2000-952572	20000807
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY			
*PRIORITY APPLN. INFO.:			US 1999-369796	A 19990806
			US 1995-440293	A3 19950512
			US 1997-966794	A2 19971110
			WO 2000-US21459	W 20000807

L2 ANSWER 4 OF 8 HCPLUS COPYRIGHT 2006 ACS on STN
 TI Bioconversion of a fermentable carbon source to 1,3-propanediol by a single microorganism expressing a foreign glycerol or diol dehydratase gene
 AB A process is provided for the bioconversion of a carbon substrate, preferably glucose, to 1,3-propanediol by a single organism utilizing microorganisms containing the genes encoding for an active glycerol or diol dehydratase enzyme. Specifically, the glycerol dehydratase gene of *Klebsiella pneumoniae* is used to prepare a transgenic microorganism capable of forming 1,3-propanediol from glucose in high yield. A cosmid covering the dha regulon of *K. pneumoniae* was cloned and the gene for the dehydratase (dhaB1, dhaB2, dhaB3) and the propanediol dehydrogenase were cloned and expressed in a variety of prokaryotic and eukaryotic microbial hosts with the manufacture of the propanediol from glucose or maltose demonstrated.

*ACCESSION NUMBER: 1997:34085 HCPLUS
 DOCUMENT NUMBER: 126:58953
 TITLE: Bioconversion of a fermentable carbon source to 1,3-propanediol by a single microorganism expressing a foreign glycerol or diol dehydratase gene
 INVENTOR(S): Laffend, Lisa Anne; Nagarajan, Vasantha; Nakamura, Charles Edwin
 PATENT ASSIGNEE(S): E. I. Du Pont de Nemours & Co., USA; Genencor International, Inc.; Laffend, Lisa Anne; Nagarajan, Vasantha; Nakamura, Charles Edwin
 *SOURCE: PCT Int. Appl., 109 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 3
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9635796	A1	19961114	WO 1996-US6705	19960510
	W: AL, AU, BB, BG, BR, CA, CN, CZ, EE, GE, HU, IS, JP, KP, KR, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, TR, TT, UA, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR,			

IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
US 5686276	A	19971111	US 1995-440293	19950512
IL 118169	A1	20010319	IL 1996-118169	19960507
IL 130789	A1	20020421	IL 1996-130789	19960507
IN 189532	A	20030322	IN 1996-CA848	19960509
CA 2220880	AA	19961114	CA 1996-2220880	19960510
AU 9656789	A1	19961129	AU 1996-56789	19960510
AU 725012	B2	20001005		
ZA 9603737	A	19971110	ZA 1996-3737	19960510
EP 826057	A1	19980304	EP 1996-913988	19960510
R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, NL, SE, PT, IE, FI				
CN 1189854	A	19980805	CN 1996-195288	19960510
JP 11502718	T2	19990309	JP 1996-534295	19960510
JP 3403412	B2	20030506		
BR 9608831	A	19990615	BR 1996-8831	19960510
CN 1500877	A	20040602	CN 2003-2003110386	19960510
AU 2003266472	A1	20040115	AU 2003-266472	20031127
PRIORITY APPLN. INFO.:				
			US 1995-440293	A2 19950512
			IL 1996-118169	A3 19960507
			WO 1996-US6705	W 19960510
			AU 2000-71565	A3 20001113

L2 ANSWER 5 OF 8 USPATFULL on STN

·TI 1,3-propanediol and polymer derivatives from a fermentable carbon source
 AB A new polypropylene terephthalate composition is provided. The polypropylene terephthalate is comprised of 1,3-propanediol and terephthalate. The 1,3-propanediol is produced by the bioconversion of a fermentable carbon source, preferable glucose. The resulting polypropylene terephthalate is distinguished from petrochemically produced polymer on the basis of dual carbon-isotopic fingerprinting which indicates both the source and the age of the carbon.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

·ACCESSION NUMBER: 2003:120275 USPATFULL
 ·TITLE: 1,3-propanediol and polymer derivatives from a fermentable carbon source
 ·INVENTOR(S): Burch, Robert R., Exton, PA, UNITED STATES
 Dorsch, Robert R., Hockessin, DE, UNITED STATES
 Laffend, Lisa Anne, Claymont, DE, UNITED STATES
 STATES
 Nagarajan, Vasantha, Wilmington, DE, UNITED STATES
 Nakamura, Charles, Claymont, DE, UNITED STATES

NUMBER	KIND	DATE
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PATENT INFORMATION: US 2003082756 A1 20030501
 APPLICATION INFO.: US 2002-213203 A1 20020805 (10)
 RELATED APPLN. INFO.: Division of Ser. No. US 1999-369796, filed on 6 Aug 1999, GRANTED, Pat. No. US 6428767 Continuation-in-part of Ser. No. US 1997-966794, filed on 10 Nov 1997, GRANTED, Pat. No. US 6025184 Division of Ser. No. US 1995-440293, filed on 12 May 1995, GRANTED, Pat. No. US 5686276

·DOCUMENT TYPE: Utility
 FILE SEGMENT: APPLICATION
 ·LEGAL REPRESENTATIVE: E I DU PONT DE NEMOURS AND COMPANY, LEGAL PATENT RECORDS CENTER, BARLEY MILL PLAZA 25/1128, 4417 LANCASTER PIKE, WILMINGTON, DE, 19805

NUMBER OF CLAIMS: 16
 EXEMPLARY CLAIM: 1
 NUMBER OF DRAWINGS: 6 Drawing Page(s)
 LINE COUNT: 1785

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L2 ANSWER 6 OF 8 USPATFULL on STN

TI Method for identifying the source of carbon in 1,3-propanediol
AB A new polypropylene terephthalate composition is provided. The polypropylene terephthalate is comprised of 1,3-propanediol and terephthalate. The 1,3-propanediol is produced by the bioconversion of a fermentable carbon source, preferable glucose. The resulting polypropylene terephthalate is distinguished from petrochemically produced polymer on the basis of dual carbon-isotopic fingerprinting which indicates both the source and the age of the carbon.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2002:194542 USPATFULL
TITLE: Method for identifying the source of carbon in 1,3-propanediol
INVENTOR(S): Burch, Robert R., Exton, PA, United States
Dorsch, Robert R., Hockessin, DE, United States
Laffend, Lisa Anne, Claymont, DE, United States
States
Nagarajan, Vasantha, Wilmington, DE, United States
Nakamura, Charles, Claymont, DE, United States
PATENT ASSIGNEE(S): E. I. du Pont de Nemours and Company, Wilmington, DE, United States (U.S. corporation)
Genencor International, Inc., Palo Alto, CA, United States (U.S. corporation)

NUMBER	KIND	DATE
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US 6428767 B1 20020806

US 1999-369796 19990806 (9)

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1997-966794, filed on 10 Nov 1997, now patented, Pat. No. US 6025184
Division of Ser. No. US 1995-440293, filed on 12 May 1995, now patented, Pat. No. US 5686276

DOCUMENT TYPE: Utility

FILE SEGMENT: GRANTED

PRIMARY EXAMINER: Wang, Andrew

ASSISTANT EXAMINER: Zara, Jane

NUMBER OF CLAIMS: 1

EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 6 Drawing Figure(s); 6 Drawing Page(s)

LINE COUNT: 1761

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L2 ANSWER 7 OF 8 USPATFULL on STN

TI Bioconversion of a fermentable carbon source to 1,3-propanediol by a single microorganism
AB A process is provided for the bioconversion of a carbon substrate to 1,3-propanediol by a single organism utilizing either microorganisms containing the genes encoding for an active glycerol or diol dehydratase enzyme by contacting these organisms with a carbon substrate under the appropriate fermentation conditions.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2000:18270 USPATFULL
TITLE: Bioconversion of a fermentable carbon source to 1,3-propanediol by a single microorganism
INVENTOR(S): Laffend, Lisa Anne, Wilmington, DE, United States
States
Nagarajan, Vasantha, Wilmington, DE, United States
Nakamura, Charles Edwin, Claymont, DE, United States
PATENT ASSIGNEE(S): E. I. du Pont de Nemours and Company, Wilmington, DE,

United States (U.S. corporation)
Genencor International Inc., Palo Alto, CA, United
States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6025184		20000215
APPLICATION INFO.:	US 1997-966794		19971110 (8)
RELATED APPLN. INFO.:	Division of Ser. No. US 1995-440293, filed on 12 May 1995, now patented, Pat. No. US 5686276		
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Ketter, James		
ASSISTANT EXAMINER:	Yucel, Irem		
NUMBER OF CLAIMS:	4		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	2 Drawing Figure(s); 2 Drawing Page(s)		
LINE COUNT:	1105		
CAS INDEXING IS AVAILABLE FOR THIS PATENT.			

L2 ANSWER 8 OF 8 USPATFULL on STN
TI Bioconversion of a fermentable carbon source to 1,3-propanediol by a single microorganism
AB A process is provided for the bioconversion of a carbon substrate to 1,3-propanediol by a single organism utilizing either microorganisms containing the genes encoding for an active glycerol or diol dehydratase enzyme by contacting these organisms with a carbon substrate under the appropriate fermentation conditions.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
ACCESSION NUMBER: 97:104308 USPATFULL
TITLE: Bioconversion of a fermentable carbon source to 1,3-propanediol by a single microorganism
INVENTOR(S): Laffend, Lisa Anne, Wilmington, DE, United States
Nagarajan, Vasantha, Wilmington, DE, United States
Nakamura, Charles Edwin, Claymont, DE, United States
PATENT ASSIGNEE(S): E. I. Du Pont de Nemours and Company, Wilmington, DE, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5686276		19971111
APPLICATION INFO.:	US 1995-440293		19950512 (8)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Lilling, Herbert J.		
NUMBER OF CLAIMS:	16		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	2 Drawing Figure(s); 2 Drawing Page(s)		
LINE COUNT:	1171		
CAS INDEXING IS AVAILABLE FOR THIS PATENT.			

=> d his

(FILE 'HOME' ENTERED AT 18:39:27 ON 21 JUN 2006)

FILE 'MEDLINE, BIOSIS, BIOTECHDS, SCISEARCH, WPIDS, HCPLUS, USPATFULL, DGENE, EMBASE, FSTA, JICST-EPLUS, CEABA-VTB' ENTERED AT 18:40:08 ON 21 JUN 2006

E LAFFEND, L/AU

L1 4 S E1

L2 8 S E2

=> e nakamura, c/au

E1 1 NAKAMURA ZYUN/AU
E2 2 NAKAMURA ZYUNICHI/AU
E3 0 --> NAKAMURA, C/AU
E4 1 NAKAMURAA ATSUSHI/AU
E5 4 NAKAMURAA K/AU
E6 1 NAKAMURAA KANJI/AU
.E7 1 NAKAMURAA MOTOSHI/AU
E8 1 NAKAMURAA NORIO/AU
E9 1 NAKAMURAA SHIN/AU
E10 1 NAKAMURAATSUSI/AU
E11 11 NAKAMURACRAIG M/AU
E12 1 NAKAMURAD KOUZOU/AU

=> e nagarajan, v/au

E1 1 NAGARAJAN VINOD/AU
E2 1 NAGARAJAN VISWANATH/AU
.E3 0 --> NAGARAJAN, V/AU
E4 1 NAGARAJANA L/AU
E5 3 NAGARAJAPPA C S/AU
E6 2 NAGARAJAPPA D/AU
E7 4 NAGARAJAPPA H/AU
E8 2 NAGARAJAPPA K C/AU
E9 3 NAGARAJAPPA N/AU
E10 1 NAGARAJAPPA RAMESH/AU
E11 77 NAGARAJARAM H A/AU
E12 1 NAGARAJARAM HA/AU

=> d his

(FILE 'HOME' ENTERED AT 18:39:27 ON 21 JUN 2006)

FILE 'MEDLINE, BIOSIS, BIOTECHDS, SCISEARCH, WPIDS, HCPLUS, USPATFULL, DGENE, EMBASE, FSTA, JICST-EPLUS, CEABA-VTB' ENTERED AT 18:40:08 ON 21 JUN 2006

E LAFFEND, L/AU
L1 4 S E1
.L2 8 S E2
E NAKAMURA, C/AU
E NAGARAJAN, V/AU

=> s klebsiella and (dhaB1 or dhaB2 or dhaB3)

L3 142 KLEBSIELLA AND (DHAB1 OR DHAB2 OR DHAB3)

=> s 13 and (dhaT)

L4 105 L3 AND (DHAT)

.=> s 14 and (glycerol dehydratase enzyme)

L5 12 L4 AND (GLYCEROL DEHYDRATASE ENZYME)

=> d 15 ti abs ibib tot

L5 ANSWER 1 OF 12 USPATFULL on STN

TI Process for the biological production of 1,3-propanediol with high titer
AB The present invention provides an improved method for the biological production of 1,3-propanediol from a fermentable carbon source in a single microorganism. In one aspect of the present invention, an improved process for the conversion of glucose to 1,3-propanediol is achieved by the use of an *E. coli* transformed with the *Klebsiella pneumoniae* dha regulon genes dhaR, orfY, **dhaT**, orfX, orfW, **dhaB1**, **dhaB2**, **dhaB3**, and

orfZ, all these genes arranged in the same genetic organization as found in wild type **Klebsiella pneumoniae**. In another aspect of the present invention, an improved process for the production of 1,3-propanediol from glucose using a recombinant *E. coli* containing genes encoding a G3PDH, a G3P phosphatase, a dehydratase, and a dehydratase reactivation factor compared to an identical process using a recombinant *E. coli* containing genes encoding a G3PDH, a G3P phosphatase, a dehydratase, a dehydratase reactivation factor and a 1,3-propanediol oxidoreductase (**dhaT**). The dramatically improved process relies on the presence in *E. coli* of a gene encoding a non-specific catalytic activity sufficient to convert 3-hydroxypropionaldehyde to 1,3-propanediol.

ACCESSION NUMBER: 2006:144073 USPATFULL
TITLE: Process for the biological production of 1,3-propanediol with high titer
INVENTOR(S): Emptage, Mark, Wilmington, DE, UNITED STATES
Haynie, Sharon L., Philadelphia, PA, UNITED STATES
Laffend, Lisa A., Claymont, DE, UNITED STATES
Pucci, Jeff P., Pacifica, CA, UNITED STATES
Whited, Gregory Marshall, Belmont, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2006121588	A1	20060608
APPLICATION INFO.:	US 2006-282993	A1	20060213 (11)
RELATED APPLN. INFO.:	Division of Ser. No. US 2002-277249, filed on 21 Oct 2002, PENDING Division of Ser. No. US 2000-641652, filed on 18 Aug 2000, GRANTED, Pat. No. US 6514733		

	NUMBER	DATE
PRIORITY INFORMATION:	US 1999-149534P	19990818 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	E I DU PONT DE NEMOURS AND COMPANY, LEGAL PATENT RECORDS CENTER, BARLEY MILL PLAZA 25/1128, 4417 LANCASTER PIKE, WILMINGTON, DE, 19805, US	
NUMBER OF CLAIMS:	6	
EXEMPLARY CLAIM:	1-24	
NUMBER OF DRAWINGS:	6 Drawing Page(s)	
LINE COUNT:	3706	

L5 ANSWER 2 OF 12 USPATFULL on STN

·TI Promoter and plasmid system for genetic engineering
AB This invention provides a series of low-copy number plasmids comprising restriction endonuclease recognition sites useful for cloning at least three different genes or operons, each flanked by a terminator sequence, the plasmids containing variants of glucose isomerase promoters for varying levels of protein expression. The materials and methods are useful for genetic engineering in microorganisms, especially where multiple genetic insertions are sought.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

·ACCESSION NUMBER: 2005:171221 USPATFULL
TITLE: Promoter and plasmid system for genetic engineering
INVENTOR(S): Payne, Mark S., Wilmington, DE, UNITED STATES
Picataggio, Stephen K., Landenberg, PA, UNITED STATES
Hsu, Amy K., Redwood, CA, UNITED STATES
Nair, Ramesh, Cupertino, CA, UNITED STATES
Valle, Fernando, Burlingame, CA, UNITED STATES
Soucaille, Philippe, San Francisco, CA, UNITED STATES
Trimbur, Donald Eugene, Redwood City, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2005147968	A1	20050707
APPLICATION INFO.:	US 2003-420587	A1	20030422 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-374931P	20020422 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	E I DU PONT DE NEMOURS AND COMPANY, LEGAL PATENT RECORDS CENTER, BARLEY MILL PLAZA 25/1128, 4417 LANCASTER PIKE, WILMINGTON, DE, 19805, US	
NUMBER OF CLAIMS:	13	
EXEMPLARY CLAIM:	1	
LINE COUNT:	3811	
CAS INDEXING IS AVAILABLE FOR THIS PATENT.		

.L5 ANSWER 3 OF 12 USPATFULL on STN
TI Promoter and plasmid system for genetic engineering
AB This invention provides a series of low-copy number plasmids comprising restriction endonuclease recognition sites useful for cloning at least three different genes or operons, each flanked by a terminator sequence, the plasmids containing variants of glucose isomerase promoters for varying levels of protein expression. The materials and methods are useful for genetic engineering in microorganisms, especially where multiple genetic insertions are sought.

.CAS INDEXING IS AVAILABLE FOR THIS PATENT.
ACCESSION NUMBER: 2004:299232 USPATFULL
TITLE: Promoter and plasmid system for genetic engineering
INVENTOR(S): Payne, Mark S., Wilmington, DE, UNITED STATES
Picataggio, Stephen K., Landenberg, PA, UNITED STATES
Hsu, Amy Kuang-Hua, Redwood City, CA, UNITED STATES
Nair, Ramesh V., Cupertino, CA, UNITED STATES
Valle, Fernando, Burlingame, CA, UNITED STATES
Soucaille, Philippe, Deyme, FRANCE
Trimbur, Donald E., Landenberg, PA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2004235099	A1	20041125
APPLICATION INFO.:	US 2003-739542	A1	20031218 (10)
RELATED APPLN. INFO.:	Continuation of Ser. No. US 2003-420587, filed on 22 Apr 2003, ABANDONED		

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-374931P	20020422 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	E I DU PONT DE NEMOURS AND COMPANY, LEGAL PATENT RECORDS CENTER, BARLEY MILL PLAZA 25/1128, 4417 LANCASTER PIKE, WILMINGTON, DE, 19805	
NUMBER OF CLAIMS:	13	
EXEMPLARY CLAIM:	1	
LINE COUNT:	3842	
CAS INDEXING IS AVAILABLE FOR THIS PATENT.		

L5 ANSWER 4 OF 12 USPATFULL on STN
TI Process for the biological production of 1,3-propanediol with high yield
AB The present invention provides a microorganism useful for biologically

producing 1,3-propanediol from a fermentable carbon source at higher yield than was previously known. The complexity of the cofactor requirements necessitates the use of a whole cell catalyst for an industrial process that utilizes this reaction sequence to produce 1,3-propanediol. The invention provides a microorganism with disruptions in specified genes and alterations in the expression levels of specified genes that is useful in a higher yielding process to produce 1,3-propanediol.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2004:196869 USPATFULL

TITLE: Process for the biological production of 1,3-propanediol with high yield

INVENTOR(S): Cervin, Marguerite A., Redwood City, CA, UNITED STATES
Soucaille, Philippe, Deyme, CA, UNITED STATES
Valle, Fernando, Burlingame, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2004152174	A1	20040805
APPLICATION INFO.:	US 2003-680286	A1	20031006 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-416192P	20021004 (60)

DOCUMENT TYPE: Utility

FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: E I DU PONT DE NEMOURS AND COMPANY, LEGAL PATENT RECORDS CENTER, BARLEY MILL PLAZA 25/1128, 4417 LANCASTER PIKE, WILMINGTON, DE, 19805

NUMBER OF CLAIMS: 8

EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 1 Drawing Page(s)

LINE COUNT: 4322

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 5 OF 12 USPATFULL on STN

TI Process for the biological production of 1,3-propanediol with high titer
AB The present invention provides an improved method for the biological production of 1,3-propanediol from a fermentable carbon source in a single microorganism. In one aspect of the present invention, an improved process for the conversion of glucose to 1,3-propanediol is achieved by the use of an *E. coli* transformed with the *Klebsiella pneumoniae* dha regulon genes *dhaR*, *orfY*, ***dhaT***, *orfX*, *orfW*, ***dhaB1***, ***dhaB2***, ***dhaB3***, and *orfZ*, all these genes arranged in the same genetic organization as found in wild type *Klebsiella pneumoniae*. In another aspect of the present invention, an improved process for the production of 1,3-propanediol from glucose using a recombinant *E. coli* containing genes encoding a G3PDH, a G3P phosphatase, a dehydratase, and a dehydratase reactivation factor compared to an identical process using a recombinant *E. coli* containing genes encoding a G3PDH, a G3P phosphatase, a dehydratase, a dehydratase reactivation factor and a 1,3-propanediol oxidoreductase (***dhaT***). The dramatically improved process relies on the presence in *E. coli* of a gene encoding a non-specific catalytic activity sufficient to convert 3-hydroxypropionaldehyde to 1,3-propanediol.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2003:225862 USPATFULL

TITLE: Process for the biological production of 1,3-propanediol with high titer

INVENTOR(S): Emptage, Mark, Wilmington, DE, UNITED STATES

Haynie, Sharon L., Philadelphia, PA, UNITED STATES
Laffend, Lisa A., Claymont, DE, UNITED STATES
Pucci, Jeff P., Pacifica, CA, UNITED STATES
Whited, Gregory Marshall, Belmont, CA, UNITED STATES

NUMBER KIND DATE

PATENT INFORMATION: US 2003157674 A1 20030821
APPLICATION INFO.: US 2002-277249 A1 20021021 (10)
RELATED APPLN. INFO.: Division of Ser. No. US 2000-641652, filed on 18 Aug
2000, PENDING

NUMBER DATE

PRIORITY INFORMATION: US 1999-149534P 19990818 (60)
DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: E I DU PONT DE NEMOURS AND COMPANY, LEGAL PATENT
RECORDS CENTER, BARLEY MILL PLAZA 25/1128, 4417
LANCASTER PIKE, WILMINGTON, DE, 19805
NUMBER OF CLAIMS: 29
EXEMPLARY CLAIM: 1
LINE COUNT: 3915
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 6 OF 12 USPATFULL on STN
TI 1,3-propanediol and polymer derivatives from a fermentable carbon source
AB A new polypropylene terephthalate composition is provided. The
polypropylene terephthalate is comprised of 1,3-propanediol and
terephthalate. The 1,3-propanediol is produced by the bioconversion of a
fermentable carbon source, preferable glucose. The resulting
polypropylene terephthalate is distinguished from petrochemically
produced polymer on the basis of dual carbon-isotopic fingerprinting
which indicates both the source and the age of the carbon.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
ACCESSION NUMBER: 2003:120275 USPATFULL
TITLE: 1,3-propanediol and polymer derivatives from a
fermentable carbon source
INVENTOR(S): Burch, Robert R., Exton, PA, UNITED STATES
Dorsch, Robert R., Hockessin, DE, UNITED STATES
Laffend, Lisa Anne, Claymont, DE, UNITED STATES
Nagarajan, Vasantha, Wilmington, DE, UNITED STATES
Nakamura, Charles, Claymont, DE, UNITED STATES

NUMBER KIND DATE

PATENT INFORMATION: US 2003082756 A1 20030501
APPLICATION INFO.: US 2002-213203 A1 20020805 (10)
RELATED APPLN. INFO.: Division of Ser. No. US 1999-369796, filed on 6 Aug
1999, GRANTED, Pat. No. US 6428767 Continuation-in-part
of Ser. No. US 1997-966794, filed on 10 Nov 1997,
GRANTED, Pat. No. US 6025184 Division of Ser. No. US
1995-440293, filed on 12 May 1995, GRANTED, Pat. No. US
5686276
DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: E I DU PONT DE NEMOURS AND COMPANY, LEGAL PATENT
RECORDS CENTER, BARLEY MILL PLAZA 25/1128, 4417
LANCASTER PIKE, WILMINGTON, DE, 19805
NUMBER OF CLAIMS: 16
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 6 Drawing Page(s)

LINE COUNT: 1785
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 7 OF 12 USPATFULL on STN

.TI Process for the biological production of 1,3-propanediol with high titer
AB The present invention provides an improved method for the biological production of 1,3-propanediol from a fermentable carbon source in a single microorganism. In one aspect of the present invention, an improved process for the conversion of glucose to 1,3-propanediol is achieved by the use of an *E. coli* transformed with the *Klebsiella pneumoniae* dha regulon genes *dhaR*, *orfY*, ***dhaT***, *orfX*, *orfW*, ***dhaB1***, ***dhaB2***, ***dhaB3***, and *orfZ*, all these genes arranged in the same genetic organization as found in wild type *Klebsiella pneumoniae*. In another aspect of the present invention, an improved process for the production of 1,3-propanediol from glucose using a recombinant *E. coli* containing genes encoding a G3PDH, a G3P phosphatase, a dehydratase, and a dehydratase reactivation factor compared to an identical process using a recombinant *E. coli* containing genes encoding a G3PDH, a G3P phosphatase, a dehydratase, a dehydratase reactivation factor and a 1,3-propanediol oxidoreductase (***dhaT***). The dramatically improved process relies on the presence in *E. coli* of a gene encoding a non-specific catalytic activity sufficient to convert 3-hydroxypropionaldehyde to 1,3-propanediol.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2003:33323 USPATFULL
TITLE: Process for the biological production of 1,3-propanediol with high titer
INVENTOR(S): Emptage, Mark, Wilmington, DE, United States
Haynie, Sharon L., Philadelphia, PA, United States
Laffend, Lisa A., Claymont, DE, United States
Pucci, Jeff P., Pacifica, CA, United States
Whited, Gregory, Belmont, CA, United States
.PATENT ASSIGNEE(S): E. I. du Pont de Nemours and Company, Wilmington, DE, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6514733	B1	20030204
APPLICATION INFO.:	US 2000-641652		20000818 (9)

	NUMBER	DATE
.PRIORITY INFORMATION:	US 1999-149534P	19990818 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	GRANTED	
PRIMARY EXAMINER:	Prouty, Rebecca E.	
ASSISTANT EXAMINER:	Walicka, Malgorzata A	
NUMBER OF CLAIMS:	6	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	6 Drawing Figure(s); 6 Drawing Page(s)	
LINE COUNT:	3730	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 8 OF 12 USPATFULL on STN

.TI METHOD FOR THE RECOMBINANT PRODUCTION OF 1,3-PROPANEDIOL
AB The present invention provides an improved method for the production of 1,3-propanediol from a variety of carbon sources in an organism comprising DNA encoding protein X of a dehydratase or protein X in combination with at least one of protein 1, protein 2 and protein 3. The protein X may be isolated from a diol dehydratase or a glycerol dehydratase. The present invention also provides host cells comprising

protein X that are capable of increased production of 1,3-propanediol.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2003:30376 USPATFULL
TITLE: METHOD FOR THE RECOMBINANT PRODUCTION OF
1,3-PROPANEDIOL
INVENTOR(S): DUNN-COLEMAN, NIGEL, LOS GATOS, CA, UNITED STATES
DIAZ-TORRES, MARIA, SAN MATEO, CA, UNITED STATES
CHASE, MATTHEW W., CHESTERFIELD, MO, UNITED STATES
TRIMBUR, DONALD, REDWOOD CITY, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003022323	A1	20030130
	US 6953684	B2	20051011
APPLICATION INFO.:	US 1999-308207	A1	19990513 (9)
	WO 1997-US20873		19971113
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE:	DEBRA J GLAISTER, GENENCOR INTERNATIONAL INC, 925 PAGE MILL ROAD, PALO ALTO, CA, 94304		
NUMBER OF CLAIMS:	40		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	27 Drawing Page(s)		
LINE COUNT:	4264		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 9 OF 12 USPATFULL on STN

TI Method for the production of 1,3-propanediol by recombinant organisms comprising genes for vitamin B12 transport
AB Recombinant organisms are provided comprising genes encoding genes encoding glycerol dehydratase, 1,3-propanediol oxidoreductase, a gene encoding vitamin B₁₂ receptor precursor(BtuB), a gene encoding vitamin B₁₂ transport system permease protein(BtuC) and a gene encoding vitamin B₁₂ transport ATP-binding protein (BtuD). The recombinant microorganism is contacted with a carbon substrate and 1,3-propanediol is isolated from the growth media.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2002:201883 USPATFULL
TITLE: Method for the production of 1,3-propanediol by recombinant organisms comprising genes for vitamin B12 transport
INVENTOR(S): Bulthuis, Ben A., Hoofddorp, NETHERLANDS
Whited, Gregory M., Belmont, CA, United States
Trimbur, Donald E., Redwood City, CA, United States
Gatenby, Anthony A., Wilmington, DE, United States
PATENT ASSIGNEE(S): E. I. du Pont de Nemours and Company, Wilmington, DE, United States (U.S. corporation)
Genencor International, Palo Alto, CA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6432686	B1	20020813
APPLICATION INFO.:	US 1999-307973		19990510 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 1998-85190P	19980512 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	GRANTED	
PRIMARY EXAMINER:	Prouty, Rebecca E.	

ASSISTANT EXAMINER: Monshipouri, Maryam
NUMBER OF CLAIMS: 13
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 0 Drawing Figure(s); 0 Drawing Page(s)
LINE COUNT: 2037
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 10 OF 12 USPATFULL on STN
TI Method for identifying the source of carbon in 1,3-propanediol
AB A new polypropylene terephthalate composition is provided. The polypropylene terephthalate is comprised of 1,3-propanediol and terephthalate. The 1,3-propanediol is produced by the bioconversion of a fermentable carbon source, preferable glucose. The resulting polypropylene terephthalate is distinguished from petrochemically produced polymer on the basis of dual carbon-isotopic fingerprinting which indicates both the source and the age of the carbon.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
ACCESSION NUMBER: 2002:194542 USPATFULL
TITLE: Method for identifying the source of carbon in 1,3-propanediol
INVENTOR(S): Burch, Robert R., Exton, PA, United States
Dorsch, Robert R., Hockessin, DE, United States
Laffend, Lisa Anne, Claymont, DE, United States
Nagarajan, Vasantha, Wilmington, DE, United States
Nakamura, Charles, Claymont, DE, United States
PATENT ASSIGNEE(S): E. I. du Pont de Nemours and Company, Wilmington, DE, United States (U.S. corporation)
Genencor International, Inc., Palo Alto, CA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6428767	B1	20020806
APPLICATION INFO.:	US 1999-369796		19990806 (9)
RELATED APPLN. INFO.:	Continuation-in-part of Ser. No. US 1997-966794, filed on 10 Nov 1997, now patented, Pat. No. US 6025184 Division of Ser. No. US 1995-440293, filed on 12 May 1995, now patented, Pat. No. US 5686276		

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Wang, Andrew
ASSISTANT EXAMINER: Zara, Jane
NUMBER OF CLAIMS: 1
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 6 Drawing Figure(s); 6 Drawing Page(s)
LINE COUNT: 1761
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 11 OF 12 USPATFULL on STN
TI Method for the recombinant production of 1,3-propanediol
AB The present invention provides an improved method for the production of 1,3-propanediol from a variety of carbon sources in an organism capable of 1,3-propanediol production and comprising DNA encoding protein X of a microorganismal dehydratase or protein X in combination with at least one of protein 1, protein 2 and protein 3, which proteins are comparable to those encoded by orfY, orfX and orfW, respectively from a microorganismal dha regulon. The protein X may be isolated from a diol dehydratase or a glycerol dehydratase. The present invention also provides host cells comprising protein X that are capable of increased production of 1,3-propanediol.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2000:142143 USPATFULL
TITLE: Method for the recombinant production of
1,3-propanediol
INVENTOR(S): Diaz-Torres, Maria, San Mateo, CA, United States
Dunn-Coleman, Nigel S, Los Gatos, CA, United States
Chase, Matthew W., Belmont, CA, United States
Trimbur, Donald, Redwood City, CA, United States
PATENT ASSIGNEE(S): Genencor International, Inc., Rochester, NY, United
States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6136576		20001024
APPLICATION INFO.:	US 1997-969683		19971113 (8)

	NUMBER	DATE
PRIORITY INFORMATION:	US 1996-30601P	19961113 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	Granted	
PRIMARY EXAMINER:	Nashed, Nashaat T.	
NUMBER OF CLAIMS:	17	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	27 Drawing Figure(s); 27 Drawing Page(s)	
LINE COUNT:	4621	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 12 OF 12 USPATFULL on STN
TI Method for the production of 1,3-propanediol by recombinant
microorganisms
AB Recombinant organisms are provided comprising genes encoding
glycerol-3-phosphate dehydrogenase, glycerol-3-phosphatase, glycerol
dehydratase and 1,3-propanediol oxidoreductase activites useful for the
production of 1,3-propanediol from a variety of carbon substrates.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2000:4657 USPATFULL
TITLE: Method for the production of 1,3-propanediol by
recombinant microorganisms
INVENTOR(S): Nakamura, Charles E., Claymont, DE, United States
Gatenby, Anthony A., Wilmington, DE, United States
Hsu, Amy Kuang-Hua, Redwood City, CA, United States
La Reau, Richard D., Mountain View, CA, United States
Haynie, Sharon L., Philadelphia, PA, United States
Diaz-Torres, Maria, San Mateo, CA, United States
Trimbur, Donald E., Redwood City, CA, United States
Whited, Gregory M., Belmont, CA, United States
Nagarajan, Vasantha, Wilmington, DE, United States
Payne, Mark S., Wilmington, DE, United States
Picataggio, Stephen K., Landenberg, PA, United States
Nair, Ramesh V., Wilmington, DE, United States
PATENT ASSIGNEE(S): E. I. du Pont de Nemours and Company, Wilmington, DE,
United States (U.S. corporation)
Genencor International, Palo Alto, CA, United States
(U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6013494		20000111
APPLICATION INFO.:	US 1997-968563		19971112 (8)

	NUMBER	DATE
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PRIORITY INFORMATION: US 1996-30601P 19961113 (60)
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Railey, II, Johnny F.
NUMBER OF CLAIMS: 13
EXEMPLARY CLAIM: 1
LINE COUNT: 3642
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

=> s (1-3-propanediol production)

5 FILES SEARCHED...

8 FILES SEARCHED...

L6 220 (1-3-PROPANEDIOL PRODUCTION)

=> d his

(FILE 'HOME' ENTERED AT 18:39:27 ON 21 JUN 2006)

FILE 'MEDLINE, BIOSIS, BIOTECHDS, SCISEARCH, WPIDS, HCAPLUS, USPATFULL, DGENE, EMBASE, FSTA, JICST-EPLUS, CEABA-VTB' ENTERED AT 18:40:08 ON 21 JUN 2006

E LAFFEND, L/AU

L1 4 S E1

L2 8 S E2

E NAKAMURA, C/AU

E NAGARAJAN, V/AU

L3 142 S KLEBSIELLA AND (DHAB1 OR DHAB2 OR DHAB3)

L4 105 S L3 AND (DHAT)

L5 12 S L4 AND (GLYCEROL DEHYDRATASE ENZYME)

L6 220 S (1-3-PROPANEDIOL PRODUCTION)

=> s 16 and (klebsiella or citrobacter)

L7 130 L6 AND (KLEBSIELLA OR CITROBACTER)

=> s 17 and (glycerol dehydratase enzyme)

L8 20 L7 AND (GLYCEROL DEHYDRATASE ENZYME)

=> d 18 ti abs ibib tot

L8 ANSWER 1 OF 20 USPATFULL on STN

TI Process for the biological production of 1,3-propanediol with high titer
AB The present invention provides an improved method for the biological production of 1,3-propanediol from a fermentable carbon source in a single microorganism. In one aspect of the present invention, an improved process for the conversion of glucose to 1,3-propanediol is achieved by the use of an *E. coli* transformed with the *Klebsiella pneumoniae* dha regulon genes dhaR, orfY, dhaT, orfX, orfW, dhaB1, dhaB2, dhaB3, and orfZ, all these genes arranged in the same genetic organization as found in wild type *Klebsiella pneumoniae*. In another aspect of the present invention, an improved process for the production of 1,3-propanediol from glucose using a recombinant *E. coli* containing genes encoding a G3PDH, a G3P phosphatase, a dehydratase, and a dehydratase reactivation factor compared to an identical process using a recombinant *E. coli* containing genes encoding a G3PDH, a G3P phosphatase, a dehydratase, a dehydratase reactivation factor and a 1,3-propanediol oxidoreductase (dhaT). The dramatically improved process relies on the presence in *E. coli* of a gene encoding a non-specific catalytic activity sufficient to convert 3-hydroxypropionaldehyde to 1,3-propanediol.

ACCESSION NUMBER: 2006:144073 USPATFULL

TITLE: Process for the biological production of

INVENTOR(S) :
1,3-propanediol with high titer
Emptage, Mark, Wilmington, DE, UNITED STATES
Haynie, Sharon L., Philadelphia, PA, UNITED STATES
Laffend, Lisa A., Claymont, DE, UNITED STATES
Pucci, Jeff P., Pacifica, CA, UNITED STATES
Whited, Gregory Marshall, Belmont, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2006121588	A1	20060608
APPLICATION INFO.:	US 2006-282993	A1	20060213 (11)
RELATED APPLN. INFO.:	Division of Ser. No. US 2002-277249, filed on 21 Oct 2002, PENDING Division of Ser. No. US 2000-641652, filed on 18 Aug 2000, GRANTED, Pat. No. US 6514733		

	NUMBER	DATE
PRIORITY INFORMATION:	US 1999-149534P	19990818 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	E I DU PONT DE NEMOURS AND COMPANY, LEGAL PATENT RECORDS CENTER, BARLEY MILL PLAZA 25/1128, 4417 LANCASTER PIKE, WILMINGTON, DE, 19805, US	
NUMBER OF CLAIMS:	6	
EXEMPLARY CLAIM:	1-24	
NUMBER OF DRAWINGS:	6 Drawing Page(s)	
LINE COUNT:	3706	

L8 ANSWER 2 OF 20 USPATFULL on STN
TI Promoter and plasmid system for genetic engineering
AB This invention provides a series of low-copy number plasmids comprising restriction endonuclease recognition sites useful for cloning at least three different genes or operons, each flanked by a terminator sequence, the plasmids containing variants of glucose isomerase promoters for varying levels of protein expression. The materials and methods are useful for genetic engineering in microorganisms, especially where multiple genetic insertions are sought.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
ACCESSION NUMBER: 2005:171221 USPATFULL
TITLE: Promoter and plasmid system for genetic engineering
INVENTOR(S) : Payne, Mark S., Wilmington, DE, UNITED STATES
Picataggio, Stephen K., Landenberg, PA, UNITED STATES
Hsu, Amy K., Redwood, CA, UNITED STATES
Nair, Ramesh, Cupertino, CA, UNITED STATES
Valle, Fernando, Burlingame, CA, UNITED STATES
Soucaille, Philippe, San Francisco, CA, UNITED STATES
Trimbur, Donald Eugene, Redwood City, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2005147968	A1	20050707
APPLICATION INFO.:	US 2003-420587	A1	20030422 (10)
PRIORITY INFORMATION:	US 2002-374931P	20020422 (60)	
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE:	E I DU PONT DE NEMOURS AND COMPANY, LEGAL PATENT RECORDS CENTER, BARLEY MILL PLAZA 25/1128, 4417 LANCASTER PIKE, WILMINGTON, DE, 19805, US		
NUMBER OF CLAIMS:	13		

EXEMPLARY CLAIM: 1
LINE COUNT: 3811
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 3 OF 20 USPATFULL on STN
TI Production of 3-hydroxypropionic acid in recombinant organisms
AB The production of 3-hydroxypropionic acid (3-HP) from glycerol in a bacterial host is described. 3-HP is a useful feedstock for the production of polymeric materials. The genetic engineering of a bacterial host with two enzymes is sufficient to enable production of 3-HP. One enzyme is a glycerol dehydratase and the other is an aldehyde dehydrogenase.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2005:33157 USPATFULL
TITLE: Production of 3-hydroxypropionic acid in recombinant organisms
INVENTOR(S): Suthers, Patrick F., Madison, WI, United States
Cameron, Douglas C., N. Plymouth, MN, United States
PATENT ASSIGNEE(S): Wisconsin Alumni Research Foundation, Madison, WI, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6852517	B1	20050208
	WO 2001016346		20010308
APPLICATION INFO.:	US 2002-830751		20020910 (9)
	WO 2000-US23878		20000830
			20020910 PCT 371 date

	NUMBER	DATE
PRIORITY INFORMATION:	US 1999-151440P	19990830 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	GRANTED	
PRIMARY EXAMINER:	Saidha, Tekchand	
LEGAL REPRESENTATIVE:	Quarles & Brady LLP	
NUMBER OF CLAIMS:	8	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	0 Drawing Figure(s); 0 Drawing Page(s)	
LINE COUNT:	1661	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 4 OF 20 USPATFULL on STN
TI Promoter and plasmid system for genetic engineering
AB This invention provides a series of low-copy number plasmids comprising restriction endonuclease recognition sites useful for cloning at least three different genes or operons, each flanked by a terminator sequence, the plasmids containing variants of glucose isomerase promoters for varying levels of protein expression. The materials and methods are useful for genetic engineering in microorganisms, especially where multiple genetic insertions are sought.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2004:299232 USPATFULL
TITLE: Promoter and plasmid system for genetic engineering
INVENTOR(S): Payne, Mark S., Wilmington, DE, UNITED STATES
Picataggio, Stephen K., Landenbert, PA, UNITED STATES
Hsu, Amy Kuang-Hua, Redwood City, CA, UNITED STATES
Nair, Ramesh V., Cupertino, CA, UNITED STATES
Valle, Fernando, Burlingam, CA, UNITED STATES
Soucaille, Philippe, Deyme, FRANCE
Trimbur, Donald E., Landenberg, PA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2004235099	A1	20041125
APPLICATION INFO.:	US 2003-739542	A1	20031218 (10)
RELATED APPLN. INFO.:	Continuation of Ser. No. US 2003-420587, filed on 22 Apr 2003, ABANDONED		

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-374931P	20020422 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	E I DU PONT DE NEMOURS AND COMPANY, LEGAL PATENT RECORDS CENTER, BARLEY MILL PLAZA 25/1128, 4417 LANCASTER PIKE, WILMINGTON, DE, 19805	
NUMBER OF CLAIMS:	13	
EXEMPLARY CLAIM:	1	
LINE COUNT:	3842	
CAS INDEXING IS AVAILABLE FOR THIS PATENT.		

L8 ANSWER 5 OF 20 USPATFULL on STN
 TI Methods for producing end-products from carbon substrates
 AB The present invention provides means for the production of desired end-products of in vitro and/or in vivo bioconversion of biomass-based feed stock substrates, including but not limited to such materials as starch and cellulose. In particularly preferred embodiments, the methods of the present invention do not require gelatinization and/or liquefaction of the substrate.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
 ACCESSION NUMBER: 2004:203410 USPATFULL
 TITLE: Methods for producing end-products from carbon substrates
 INVENTOR(S): Chotani, Gopal K., Cupertino, CA, UNITED STATES
 Kumar, Manoj, Fremont, CA, UNITED STATES
 Pucci, Jeff P., Pacifica, CA, UNITED STATES
 Sanford, Karl J., Cupertino, CA, UNITED STATES
 Shetty, Jayarama K., Pleasanton, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2004157301	A1	20040812
APPLICATION INFO.:	US 2004-765652	A1	20040126 (10)
RELATED APPLN. INFO.:	Continuation of Ser. No. US 2003-359771, filed on 6 Feb 2003, PENDING		

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-355260P	20020208 (60)
DOCUMENT TYPE:	US 2002-355180P	20020208 (60)
FILE SEGMENT:	Utility	
LEGAL REPRESENTATIVE:	APPLICATION	
NUMBER OF CLAIMS:	29	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	12 Drawing Page(s)	
LINE COUNT:	2567	
CAS INDEXING IS AVAILABLE FOR THIS PATENT.		

L8 ANSWER 6 OF 20 USPATFULL on STN
 TI Process for the biological production of 1,3-propanediol with high yield

AB The present invention provides a microorganism useful for biologically producing 1,3-propanediol from a fermentable carbon source at higher yield than was previously known. The complexity of the cofactor requirements necessitates the use of a whole cell catalyst for an industrial process that utilizes this reaction sequence to produce 1,3-propanediol. The invention provides a microorganism with disruptions in specified genes and alterations in the expression levels of specified genes that is useful in a higher yielding process to produce 1,3-propanediol.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2004:196869 USPATFULL
TITLE: Process for the biological production of 1,3-propanediol with high yield
INVENTOR(S): Cervin, Marguerite A., Redwood City, CA, UNITED STATES
Soucaille, Philippe, Deyme, CA, UNITED STATES
Valle, Fernando, Burlingame, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2004152174	A1	20040805
APPLICATION INFO.:	US 2003-680286	A1	20031006 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-416192P	20021004 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	E I DU PONT DE NEMOURS AND COMPANY, LEGAL PATENT RECORDS CENTER, BARLEY MILL PLAZA 25/1128, 4417 LANCASTER PIKE, WILMINGTON, DE, 19805	
NUMBER OF CLAIMS:	8	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	1 Drawing Page(s)	
LINE COUNT:	4322	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 7 OF 20 USPATFULL on STN

TI Methods for producing end-products from carbon substrates
AB The present invention provides means for the production of desired end-products of in vitro and/or in vivo bioconversion of biomass-based feed stock substrates, including but not limited to such materials as starch and cellulose. In particularly preferred embodiments, the methods of the present invention do not require gelatinization and/or liquefaction of the substrate.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2003:288696 USPATFULL
TITLE: Methods for producing end-products from carbon substrates
INVENTOR(S): Chotani, Gopal K., Cupertino, CA, UNITED STATES
Kumar, Manoj, Fremont, CA, UNITED STATES
Pucci, Jeff P., Pacifica, CA, UNITED STATES
Sanford, Karl J., Cupertino, CA, UNITED STATES
Shetty, Jayarama K., Pleasanton, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003203454	A1	20031030
APPLICATION INFO.:	US 2003-359771	A1	20030206 (10)

	NUMBER	DATE

PRIORITY INFORMATION: US 2002-355260P 20020208 (60)
US 2002-355180P 20020208 (60)
DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: KAMRIN T. MACKNIGHT, GENENCOR INTERNATIONAL, INC., 925
PAGE MILL ROAD, PALO ALTO, CA, 94304-1013
NUMBER OF CLAIMS: 29
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 12 Drawing Page(s)
LINE COUNT: 2564
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 8 OF 20 USPATFULL on STN

TI Process for the biological production of 1,3-propanediol with high titer
AB The present invention provides an improved method for the biological production of 1,3-propanediol from a fermentable carbon source in a single microorganism. In one aspect of the present invention, an improved process for the conversion of glucose to 1,3-propanediol is achieved by the use of an *E. coli* transformed with the *Klebsiella pneumoniae* dha regulon genes dhaR, orfY, dhaT, orfX, orfW, dhaB1, dhaB2, dhaB3, and orfZ, all these genes arranged in the same genetic organization as found in wild type *Klebsiella pneumoniae*. In another aspect of the present invention, an improved process for the production of 1,3-propanediol from glucose using a recombinant *E. coli* containing genes encoding a G3PDH, a G3P phosphatase, a dehydratase, and a dehydratase reactivation factor compared to an identical process using a recombinant *E. coli* containing genes encoding a G3PDH, a G3P phosphatase, a dehydratase, a dehydratase reactivation factor and a 1,3-propanediol oxidoreductase (dhaT). The dramatically improved process relies on the presence in *E. coli* of a gene encoding a non-specific catalytic activity sufficient to convert 3-hydroxypropionaldehyde to 1,3-propanediol.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2003:225862 USPATFULL
TITLE: Process for the biological production of 1,3-propanediol with high titer
INVENTOR(S): Emptage, Mark, Wilmington, DE, UNITED STATES
Haynie, Sharon L., Philadelphia, PA, UNITED STATES
Laffend, Lisa A., Claymont, DE, UNITED STATES
Pucci, Jeff P., Pacifica, CA, UNITED STATES
Whited, Gregory Marshall, Belmont, CA, UNITED STATES

NUMBER KIND DATE

PATENT INFORMATION: US 2003157674 A1 20030821
APPLICATION INFO.: US 2002-277249 A1 20021021 (10)
RELATED APPLN. INFO.: Division of Ser. No. US 2000-641652, filed on 18 Aug 2000, PENDING

NUMBER DATE

PRIORITY INFORMATION: US 1999-149534P 19990818 (60)
DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: E I DU PONT DE NEMOURS AND COMPANY, LEGAL PATENT RECORDS CENTER, BARLEY MILL PLAZA 25/1128, 4417 LANCASTER PIKE, WILMINGTON, DE, 19805

NUMBER OF CLAIMS: 29
EXEMPLARY CLAIM: 1
LINE COUNT: 3915

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 9 OF 20 USPATFULL on STN

TI 1,3-propanediol and polymer derivatives from a fermentable carbon source
AB A new polypropylene terephthalate composition is provided. The polypropylene terephthalate is comprised of 1,3-propanediol and terephthalate. The 1,3-propanediol is produced by the bioconversion of a fermentable carbon source, preferable glucose. The resulting polypropylene terephthalate is distinguished from petrochemically produced polymer on the basis of dual carbon-isotopic fingerprinting which indicates both the source and the age of the carbon.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2003:120275 USPATFULL

TITLE: 1,3-propanediol and polymer derivatives from a fermentable carbon source

INVENTOR(S): Burch, Robert R., Exton, PA, UNITED STATES
Dorsch, Robert R., Hockessin, DE, UNITED STATES
Laffend, Lisa Anne, Claymont, DE, UNITED STATES
Nagarajan, Vasantha, Wilmington, DE, UNITED STATES
Nakamura, Charles, Claymont, DE, UNITED STATES

NUMBER KIND DATE

PATENT INFORMATION: US 2003082756 A1 20030501

APPLICATION INFO.: US 2002-213203 A1 20020805 (10)

RELATED APPLN. INFO.: Division of Ser. No. US 1999-369796, filed on 6 Aug 1999, GRANTED, Pat. No. US 6428767 Continuation-in-part of Ser. No. US 1997-966794, filed on 10 Nov 1997, GRANTED, Pat. No. US 6025184 Division of Ser. No. US 1995-440293, filed on 12 May 1995, GRANTED, Pat. No. US 5686276

DOCUMENT TYPE: Utility

FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: E I DU PONT DE NEMOURS AND COMPANY, LEGAL PATENT RECORDS CENTER, BARLEY MILL PLAZA 25/1128, 4417 LANCASTER PIKE, WILMINGTON, DE, 19805

NUMBER OF CLAIMS: 16

EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 6 Drawing Page(s)

LINE COUNT: 1785

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 10 OF 20 USPATFULL on STN

TI Process for the biological production of 1,3-propanediol with high titer

AB The present invention provides an improved method for the biological production of 1,3-propanediol from a fermentable carbon source in a single microorganism. In one aspect of the present invention, an improved process for the conversion of glucose to 1,3-propanediol is achieved by the use of an E. coli transformed with the *Klebsiella pneumoniae* dha regulon genes dhaR, orfY, dhaT, orfX, orfW, dhaB1, dhaB2, dhaB3, and orfZ, all these genes arranged in the same genetic organization as found in wild type *Klebsiella pneumoniae*. In another aspect of the present invention, an improved process for the production of 1,3-propanediol from glucose using a recombinant E. coli containing genes encoding a G3PDH, a G3P phosphatase, a dehydratase, and a dehydratase reactivation factor compared to an identical process using a recombinant E. coli containing genes encoding a G3PDH, a G3P phosphatase, a dehydratase, a dehydratase reactivation factor and a 1,3-propanediol oxidoreductase (dhaT). The dramatically improved process relies on the presence in E. coli of a gene encoding a non-specific catalytic activity sufficient to convert 3-hydroxypropionaldehyde to 1,3-propanediol.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2003:33323 USPATFULL
TITLE: Process for the biological production of
1,3-propanediol with high titer
INVENTOR(S): Emptage, Mark, Wilmington, DE, United States
Haynie, Sharon L., Philadelphia, PA, United States
Laffend, Lisa A., Claymont, DE, United States
Pucci, Jeff P., Pacifica, CA, United States
Whited, Gregory, Belmont, CA, United States
PATENT ASSIGNEE(S): E. I. du Pont de Nemours and Company, Wilmington, DE,
United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6514733	B1	20030204
APPLICATION INFO.:	US 2000-641652		20000818 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 1999-149534P	19990818 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	GRANTED	
PRIMARY EXAMINER:	Prouty, Rebecca E.	
ASSISTANT EXAMINER:	Walicka, Malgorzata A	
NUMBER OF CLAIMS:	6	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	6 Drawing Figure(s); 6 Drawing Page(s)	
LINE COUNT:	3730	
CAS INDEXING IS AVAILABLE FOR THIS PATENT.		

L8 ANSWER 11 OF 20 USPATFULL on STN
TI METHOD FOR THE RECOMBINANT PRODUCTION OF 1,3-PROPANEDIOL
AB The present invention provides an improved method for the production of 1,3-propanediol from a variety of carbon sources in an organism comprising DNA encoding protein X of a dehydratase or protein X in combination with at least one of protein 1, protein 2 and protein 3. The protein X may be isolated from a diol dehydratase or a glycerol dehydratase. The present invention also provides host cells comprising protein X that are capable of increased production of 1,3-propanediol.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
ACCESSION NUMBER: 2003:30376 USPATFULL
TITLE: METHOD FOR THE RECOMBINANT PRODUCTION OF
1,3-PROPANEDIOL
INVENTOR(S): DUNN-COLEMAN, NIGEL, LOS GATOS, CA, UNITED STATES
DIAZ-TORRES, MARIA, SAN MATEO, CA, UNITED STATES
CHASE, MATTHEW W., CHESTERFIELD, MO, UNITED STATES
TRIMBUR, DONALD, REDWOOD CITY, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 20030222323	A1	20030130
	US 6953684	B2	20051011
APPLICATION INFO.:	US 1999-308207	A1	19990513 (9)
	WO 1997-US20873		19971113
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE:	DEBRA J GLAISTER, GENENCOR INTERNATIONAL INC, 925 PAGE MILL ROAD, PALO ALTO, CA, 94304		
NUMBER OF CLAIMS:	40		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	27 Drawing Page(s)		
LINE COUNT:	4264		
CAS INDEXING IS AVAILABLE FOR THIS PATENT.			

L8 ANSWER 12 OF 20 USPATFULL on STN
TI Method for the production of 1,3-propanediol by recombinant organisms comprising genes for vitamin B12 transport
AB Recombinant organisms are provided comprising genes encoding genes encoding glycerol dehydratase, 1,3-propanediol oxidoreductase, a gene encoding vitamin B.sub.12 receptor precursor(BtuB), a gene encoding vitamin B.sub.12 transport system permease protein(BtuC) and a gene encoding vitamin B.sub.12 transport ATP-binding protein (BtuD). The recombinant microorganism is contacted with a carbon substrate and 1,3-propanediol is isolated from the growth media.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2002:201883 USPATFULL
TITLE: Method for the production of 1,3-propanediol by recombinant organisms comprising genes for vitamin B12 transport
INVENTOR(S): Bulthuis, Ben A., Hoofddorp, NETHERLANDS
Whited, Gregory M., Belmont, CA, United States
Trimbur, Donald E., Redwood City, CA, United States
Gatenby, Anthony A., Wilmington, DE, United States
PATENT ASSIGNEE(S): E. I. du Pont de Nemours and Company, Wilmington, DE, United States (U.S. corporation)
Genencor International, Palo Alto, CA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6432686	B1	20020813
APPLICATION INFO.:	US 1999-307973		19990510 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 1998-85190P	19980512 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	GRANTED	
PRIMARY EXAMINER:	Prouty, Rebecca E.	
ASSISTANT EXAMINER:	Monshipouri, Maryam	
NUMBER OF CLAIMS:	13	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	0 Drawing Figure(s); 0 Drawing Page(s)	
LINE COUNT:	2037	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 13 OF 20 USPATFULL on STN
TI Method for identifying the source of carbon in 1,3-propanediol
AB A new polypropylene terephthalate composition is provided. The polypropylene terephthalate is comprised of 1,3-propanediol and terephthalate. The 1,3-propanediol is produced by the bioconversion of a fermentatble carbon source, preferable glucose. The resulting polypropylene terephthalate is distinguished from petrochemically produced polymer on the basis of dual carbon-isotopic fingerprinting which indicates both the source and the age of the carbon.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2002:194542 USPATFULL
TITLE: Method for identifying the source of carbon in 1,3-propanediol
INVENTOR(S): Burch, Robert R., Exton, PA, United States
Dorsch, Robert R., Hockessin, DE, United States
Laffend, Lisa Anne, Claymont, DE, United States
Nagarajan, Vasantha, Wilmington, DE, United States
Nakamura, Charles, Claymont, DE, United States

*PATENT ASSIGNEE(S) : E. I. du Pont de Nemours and Company, Wilmington, DE, United States (U.S. corporation)
Genencor International, Inc., Palo Alto, CA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6428767	B1	20020806
APPLICATION INFO.:	US 1999-369796		19990806 (9)
RELATED APPLN. INFO.:	Continuation-in-part of Ser. No. US 1997-966794, filed on 10 Nov 1997, now patented, Pat. No. US 6025184 Division of Ser. No. US 1995-440293, filed on 12 May 1995, now patented, Pat. No. US 5686276		

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Wang, Andrew
ASSISTANT EXAMINER: Zara, Jane
NUMBER OF CLAIMS: 1
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 6 Drawing Figure(s); 6 Drawing Page(s)
LINE COUNT: 1761
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 14 OF 20 USPATFULL on STN

TI Method for the recombinant production of 1,3-propanediol
AB The present invention provides an improved method for the production of 1,3-propanediol from a variety of carbon sources in an organism capable of **1,3-propanediol production** and comprising DNA encoding protein X of a microorganismal dehydratase or protein X in combination with at least one of protein 1, protein 2 and protein 3, which proteins are comparable to those encoded by orfY, orfX and orfW, respectively from a microorganismal dha regulon. The protein X may be isolated from a diol dehydratase or a glycerol dehydratase. The present invention also provides host cells comprising protein X that are capable of increased production of 1,3-propanediol.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2000:142143 USPATFULL
TITLE: Method for the recombinant production of 1,3-propanediol
INVENTOR(S): Diaz-Torres, Maria, San Mateo, CA, United States
Dunn-Coleman, Nigel S, Los Gatos, CA, United States
Chase, Matthew W., Belmont, CA, United States
Trimbur, Donald, Redwood City, CA, United States
PATENT ASSIGNEE(S): Genencor International, Inc., Rochester, NY, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6136576		20001024
APPLICATION INFO.:	US 1997-969683		19971113 (8)

	NUMBER	DATE
PRIORITY INFORMATION:	US 1996-30601P	19961113 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	Granted	
PRIMARY EXAMINER:	Nashed, Nashaat T.	
NUMBER OF CLAIMS:	17	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	27 Drawing Figure(s); 27 Drawing Page(s)	
LINE COUNT:	4621	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 15 OF 20 USPATFULL on STN
TI Bioconversion of a fermentable carbon source to 1,3-propanediol by a single microorganism
AB A process is provided for the bioconversion of a carbon substrate to 1,3-propanediol by a single organism utilizing either microorganisms containing the genes encoding for an active glycerol or diol dehydratase enzyme by contacting these organisms with a carbon substrate under the appropriate fermentation conditions.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2000:18270 USPATFULL
TITLE: Bioconversion of a fermentable carbon source to 1,3-propanediol by a single microorganism
INVENTOR(S): Laffend, Lisa Anne, Wilmington, DE, United States
Nagarajan, Vasantha, Wilmington, DE, United States
Nakamura, Charles Edwin, Claymont, DE, United States
PATENT ASSIGNEE(S): E. I. du Pont de Nemours and Company, Wilmington, DE, United States (U.S. corporation)
Genencor International Inc., Palo Alto, CA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6025184		20000215
APPLICATION INFO.:	US 1997-966794		19971110 (8)
RELATED APPLN. INFO.:	Division of Ser. No. US 1995-440293, filed on 12 May 1995, now patented, Pat. No. US 5686276		
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Ketter, James		
ASSISTANT EXAMINER:	Yucel, Irem		
NUMBER OF CLAIMS:	4		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	2 Drawing Figure(s); 2 Drawing Page(s)		
LINE COUNT:	1105		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 16 OF 20 USPATFULL on STN
TI Method for the production of 1,3-propanediol by recombinant microorganisms
AB Recombinant organisms are provided comprising genes encoding glycerol-3-phosphate dehydrogenase, glycerol-3-phosphatase, glycerol dehydratase and 1,3-propanediol oxidoreductase activites useful for the production of 1,3-propanediol from a variety of carbon substrates.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2000:4657 USPATFULL
TITLE: Method for the production of 1,3-propanediol by recombinant microorganisms
INVENTOR(S): Nakamura, Charles E., Claymont, DE, United States
Gatenby, Anthony A., Wilmington, DE, United States
Hsu, Amy Kuang-Hua, Redwood City, CA, United States
La Reau, Richard D., Mountain View, CA, United States
Haynie, Sharon L., Philadelphia, PA, United States
Diaz-Torres, Maria, San Mateo, CA, United States
Trimbur, Donald E., Redwood City, CA, United States
Whited, Gregory M., Belmont, CA, United States
Nagarajan, Vasantha, Wilmington, DE, United States
Payne, Mark S., Wilmington, DE, United States
Picataggio, Stephen K., Landenberg, PA, United States
Nair, Ramesh V., Wilmington, DE, United States
PATENT ASSIGNEE(S): E. I. du Pont de Nemours and Company, Wilmington, DE,

United States (U.S. corporation)
Genencor International, Palo Alto, CA, United States
(U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6013494		20000111
APPLICATION INFO.:	US 1997-968563		19971112 (8)

	NUMBER	DATE
PRIORITY INFORMATION:	US 1996-30601P	19961113 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	Granted	
PRIMARY EXAMINER:	Railey, II, Johnny F.	
NUMBER OF CLAIMS:	13	
EXEMPLARY CLAIM:	1	
LINE COUNT:	3642	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 17 OF 20 USPATFULL on STN
TI Production of 1,3-propanediol from glycerol by recombinant bacteria expressing recombinant diol dehydratase
AB A process is provided for the bioconversion of glycerol to 1,3-propanediol in which genes from a bacteria known to possess a diol dehydratase enzyme for 1,2-propanediol degradation are cloned into a bacterial host and the host is grown in the presence of glycerol; expression of the foreign genes in the host cell facilitates the enzymatic conversion of glycerol to 1,3-propanediol which is isolated from the culture.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
ACCESSION NUMBER: 1998:124423 USPATFULL
TITLE: Production of 1,3-propanediol from glycerol by recombinant bacteria expressing recombinant diol dehydratase
INVENTOR(S): Nagarajan, Vasantha, Wilmington, DE, United States
Nakamura, Charles Edwin, Claymont, DE, United States
PATENT ASSIGNEE(S): E. I. du Pont de Nemours and Company, Wilmington, DE, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5821092		19981013
APPLICATION INFO.:	US 1996-687852		19960726 (8)
RELATED APPLN. INFO.:	Division of Ser. No. US 1995-440377, filed on 12 May 1995, now patented, Pat. No. US 5633362		
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Grimes, Eric		
ASSISTANT EXAMINER:	Nashed, Nashaat T.		
NUMBER OF CLAIMS:	10		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	5 Drawing Figure(s); 4 Drawing Page(s)		
LINE COUNT:	884		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 18 OF 20 USPATFULL on STN
TI Bioconversion of a fermentable carbon source to 1,3-propanediol by a single microorganism
AB A process is provided for the bioconversion of a carbon substrate to 1,3-propanediol by a single organism utilizing either microorganisms containing the genes encoding for an active glycerol or diol dehydratase

enzyme by contacting these organisms with a carbon substrate under the appropriate fermentation conditions.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 97:104308 USPATFULL
TITLE: Bioconversion of a fermentable carbon source to 1,3-propanediol by a single microorganism
INVENTOR(S): Laffend, Lisa Anne, Wilmington, DE, United States
Nagarajan, Vasantha, Wilmington, DE, United States
Nakamura, Charles Edwin, Claymont, DE, United States
PATENT ASSIGNEE(S): E. I. Du Pont de Nemours and Company, Wilmington, DE, United States (U.S. corporation)

NUMBER KIND DATE

PATENT INFORMATION: US 5686276 19971111
APPLICATION INFO.: US 1995-440293 19950512 (8)

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Lilling, Herbert J.
NUMBER OF CLAIMS: 16
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Figure(s); 2 Drawing Page(s)
LINE COUNT: 1171
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 19 OF 20 USPATFULL on STN

TI Production of 1,3-propanediol from glycerol by recombinant bacteria expressing recombinant diol dehydratase
AB A process is provided for the bioconversion of glycerol to 1,3-propanediol in which genes from a bacteria known to possess a diol dehydratase enzyme for 1,2-propanediol degradation are cloned into a bacterial host and the host is grown in the presence of glycerol; expression of the foreign genes in the host cell facilitates the enzymatic conversion of glycerol to 1,3-propanediol which is isolated from the culture.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 97:45122 USPATFULL
TITLE: Production of 1,3-propanediol from glycerol by recombinant bacteria expressing recombinant diol dehydratase
INVENTOR(S): Nagarajan, Vasantha, Wilmington, DE, United States
Nakamura, Charles E., Claymont, DE, United States
PATENT ASSIGNEE(S): E. I. Du Pont de Nemours and Company, Wilmington, DE, United States (U.S. corporation)

NUMBER KIND DATE

PATENT INFORMATION: US 5633362 19970527
APPLICATION INFO.: US 1995-440377 19950512 (8)
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Zitomer, Stephanie W.
ASSISTANT EXAMINER: Fredman, Jeffrey
NUMBER OF CLAIMS: 10
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 5 Drawing Figure(s); 4 Drawing Page(s)
LINE COUNT: 831
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 20 OF 20 USPATFULL on STN

TI Process for making 1,3-propanediol from carbohydrates using mixed

microbial cultures

AB The present invention provides a process for the biotransformation of a carbohydrate carbon source to 1,3-propanediol using mixed yeast and bacterial cultures wherein the carbohydrate is first fermented to glycerol by the yeast cell and then converted to 1,3-propanediol by the bacterial cell containing an active diol or **glycerol dehydratase enzyme** in this process both the yeast and bacterial cultures are supported on the same carbon source, and 1,3-propanediol is isolated from the media.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 97:9921 USPATFULL
TITLE: Process for making 1,3-propanediol from carbohydrates using mixed microbial cultures
INVENTOR(S): Haynie, Sharon L., Philadelphia, PA, United States
Wagner, Lorraine W., Newark, DE, United States
PATENT ASSIGNEE(S): E. I. du Pont de Nemours and Company, Wilmington, DE, United States (U.S. corporation)

	NUMBER	KIND	DATE
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PATENT INFORMATION:	US 5599689	19970204	
APPLICATION INFO.:	US 1995-440379	19950512	(8)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Lilling, Herbert J.		
NUMBER OF CLAIMS:	1		
EXEMPLARY CLAIM:	1		
LINE COUNT:	981		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

Refine Search

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Terms	Documents
L8 and (dhaB1 or dhaB2 or dhaT)	19

Database:

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EPO Abstracts Database
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Derwent World Patents Index
IBM Technical Disclosure Bulletins

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side by side			result set

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<u>L9</u>	L8 and (dhaB1 or dhaB2 or dhaT)	19	<u>L9</u>
<u>L8</u>	L7 and (glycerol dehydratase enzyme)	154662	<u>L8</u>
<u>L7</u>	(1-3-propanediol production)	2527283	<u>L7</u>
<u>L6</u>	("1-3-propanediol production")	0	<u>L6</u>

DB=PGPB; PLUR=YES; OP=OR

<u>L5</u>	L4 and 11	1	<u>L5</u>
<u>L4</u>	L3 and 12	1	<u>L4</u>
<u>L3</u>	nakamura.in.	5876	<u>L3</u>
<u>L2</u>	nagarajan.in.	210	<u>L2</u>
<u>L1</u>	laffend.in.	3	<u>L1</u>

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Search Results - Record(s) 1 through 10 of 19 returned.

1. Document ID: US 6953684 B2

L9: Entry 1 of 19

File: USPT

Oct 11, 2005

US-PAT-NO: 6953684

DOCUMENT-IDENTIFIER: US 6953684 B2

TITLE: Method for the recombinant production of 1,3-propanediol

DATE-ISSUED: October 11, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Dunn-Coleman; Nigel	Los Gatos	CA		
Diaz-Torres; Maria	San Mateo	CA		
Chase; Matthew W.	Chesterfield	MO		
Trimbur; Donald	Redwood City	CA		

US-CL-CURRENT: 435/252.3; 435/158, 435/252.33, 435/254.2, 530/350, 530/824, 536/23.2,
536/23.7[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Image](#) [Claims](#) [KMC](#) [Draw Desc](#) [Ima](#)

2. Document ID: US 6852517 B1

L9: Entry 2 of 19

File: USPT

Feb 8, 2005

US-PAT-NO: 6852517

DOCUMENT-IDENTIFIER: US 6852517 B1

TITLE: Production of 3-hydroxypropionic acid in recombinant organisms

DATE-ISSUED: February 8, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Suthers; Patrick F.	Madison	WI		
Cameron; Douglas C.	N. Plymouth	MN		

US-CL-CURRENT: 435/135; 435/183, 435/190, 435/252.3, 435/252.33, 435/320.1, 536/23.2[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Image](#) [Claims](#) [KMC](#) [Draw Desc](#) [Ima](#)

3. Document ID: US 6803218 B1

L9: Entry 3 of 19

File: USPT

Oct 12, 2004

US-PAT-NO: 6803218

DOCUMENT-IDENTIFIER: US 6803218 B1

TITLE: Enzymes which dehydrate glycerol

DATE-ISSUED: October 12, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Seyfried; Markus	Silver Springs	MD		
Wiegel; Juergen	Athens	GA		
Whited; Gregory	Belmont	CA		

US-CL-CURRENT: 435/158

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Claims](#) | [KOMC](#) | [Draw Desc](#) | [Ima](#)

4. Document ID: US 6706503 B2

L9: Entry 4 of 19

File: USPT

Mar 16, 2004

US-PAT-NO: 6706503

DOCUMENT-IDENTIFIER: US 6706503 B2

TITLE: Directed evolution of microorganisms

DATE-ISSUED: March 16, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Schellenberger; Volker	Palo Alto	CA		
Liu; Amy D.	Mountain View	CA		
Selifonova; Olga V.	Los Altos	CA		

US-CL-CURRENT: 435/170; 435/173.8, 435/183, 435/195, 435/233, 435/234, 435/252.3,
435/440, 435/441, 435/471, 435/479, 435/481, 435/482, 435/69.1

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5. Document ID: US 6617156 B1

L9: Entry 5 of 19

File: USPT

Sep 9, 2003

US-PAT-NO: 6617156

DOCUMENT-IDENTIFIER: US 6617156 B1

TITLE: Nucleic acid and amino acid sequences relating to Enterococcus faecalis for diagnostics and therapeutics

DATE-ISSUED: September 9, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Doucette-Stamm; Lynn A.	Framingham	MA	01701	
Bush; David	Somerville	MA	02144	

US-CL-CURRENT: 435/320.1; 435/252.3, 435/6, 435/69.1, 536/23.7, 536/24.32

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Claims](#) | [KOMC](#) | [Draw Desc](#) | [Ima](#)

6. Document ID: US 6576450 B2

L9: Entry 6 of 19

File: USPT

Jun 10, 2003

US-PAT-NO: 6576450

DOCUMENT-IDENTIFIER: US 6576450 B2

TITLE: Polyhydroxyalkanoate production from polyols

DATE-ISSUED: June 10, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Skraly; Frank A.	Boston	MA		
Peoples; Oliver P.	Arlington	MA		

US-CL-CURRENT: 435/135

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | | | | [Claims](#) | [KMD](#) | [Draw Desc](#) | [Ima](#)

7. Document ID: US 6558933 B2

L9: Entry 7 of 19

File: USPT

May 6, 2003

US-PAT-NO: 6558933

DOCUMENT-IDENTIFIER: US 6558933 B2

TITLE: Mutant 1,3-propanediol dehydrogenase

DATE-ISSUED: May 6, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Donald; Trimbur E.	Redwood City	CA		
Gregory; Whited M.	Belmont	CA		
Selifonova; Olga V.	Navarre	MN		

US-CL-CURRENT: 435/190; 435/157, 435/158, 435/252.3, 435/320.1, 435/440, 536/23.2

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | | | | [Claims](#) | [KMD](#) | [Draw Desc](#) | [Ima](#)

8. Document ID: US 6514733 B1

L9: Entry 8 of 19

File: USPT

Feb 4, 2003

US-PAT-NO: 6514733

DOCUMENT-IDENTIFIER: US 6514733 B1

TITLE: Process for the biological production of 1,3-propanediol with high titer

DATE-ISSUED: February 4, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Emptage; Mark	Wilmington	DE		

Haynie; Sharon L.	Philadelphia	PA
Laffend; Lisa A.	Claymont	DE
Pucci; Jeff P.	Pacifica	CA
Whited; Gregory	Belmont	CA

US-CL-CURRENT: 435/158; 435/155, 435/252.33

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Claims](#) | [KOMC](#) | [Draw Desc](#) | [Ima](#)

9. Document ID: US 6468773 B1

L9: Entry 9 of 19

File: USPT

Oct 22, 2002

US-PAT-NO: 6468773

DOCUMENT-IDENTIFIER: US 6468773 B1

TITLE: Mutant 1,3-propandiol dehydrogenase

DATE-ISSUED: October 22, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Donald; Trimbur E.	Redwood City	CA		
Gregory; Whited M.	Belmont	CA		
Selifonova; Olga V.	Navarre	MN		

US-CL-CURRENT: 435/190; 435/440, 536/23.2

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Claims](#) | [KOMC](#) | [Draw Desc](#) | [Ima](#)

10. Document ID: US 6432686 B1

L9: Entry 10 of 19

File: USPT

Aug 13, 2002

US-PAT-NO: 6432686

DOCUMENT-IDENTIFIER: US 6432686 B1

TITLE: Method for the production of 1,3-propanediol by recombinant organisms comprising genes for vitamin B12 transport

DATE-ISSUED: August 13, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bulthuis; Ben A.	Hoofddorp			NL
Whited; Gregory M.	Belmont	CA		
Trimbur; Donald E.	Redwood City	CA		
Gatenby; Anthony A.	Wilmington	DE		

US-CL-CURRENT: 435/158; 435/252.3, 435/320.1

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11. Document ID: US 6428767 B1

L9: Entry 11 of 19

File: USPT

Aug 6, 2002

US-PAT-NO: 6428767

DOCUMENT-IDENTIFIER: US 6428767 B1

TITLE: Method for identifying the source of carbon in 1,3-propanediol

DATE-ISSUED: August 6, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Burch; Robert R.	Exton	PA		
Dorsch; Robert R.	Hockessin	DE		
Laffend; Lisa Anne	Claymont	DE		
Nagarajan; Vasantha	Wilmington	DE		
Nakamura; Charles	Claymont	DE		

US-CL-CURRENT: [424/1.37](#); [250/281](#), [250/282](#), [424/1.11](#), [435/6](#), [435/93](#)[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Claims](#) | [KDDC](#) | [Draw. Desc](#) | [Image](#)

12. Document ID: US 6365410 B1

L9: Entry 12 of 19

File: USPT

Apr 2, 2002

US-PAT-NO: 6365410

DOCUMENT-IDENTIFIER: US 6365410 B1

TITLE: Directed evolution of microorganisms

DATE-ISSUED: April 2, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Schellenberger; Volker	Palo Alto	CA		
Liu; Amy D.	Mountain View	CA		
Selifonova; Olga V.	Los Altos	CA		

US-CL-CURRENT: [435/488](#); [435/243](#), [435/252.3](#), [435/252.33](#), [435/320.1](#), [435/440](#)[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Claims](#) | [KDDC](#) | [Draw. Desc](#) | [Image](#)

13. Document ID: US 6329183 B1

L9: Entry 13 of 19

File: USPT

Dec 11, 2001

US-PAT-NO: 6329183

DOCUMENT-IDENTIFIER: US 6329183 B1

** See image for Certificate of Correction **

TITLE: Polyhydroxyalkanoate production from polyols

DATE-ISSUED: December 11, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Skraly; Frank A.	Boston	MA		
Peoples; Oliver P.	Arlington	MA		

US-CL-CURRENT: 435/135

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) |  | [Claims](#) | [KMC](#) | [Draw Desc](#) | [Ima](#)

14. Document ID: US 6136576 A

L9: Entry 14 of 19

File: USPT

Oct 24, 2000

US-PAT-NO: 6136576

DOCUMENT-IDENTIFIER: US 6136576 A

TITLE: Method for the recombinant production of 1,3-propanediol

DATE-ISSUED: October 24, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Diaz-Torres; Maria	San Mateo	CA		
Dunn-Coleman; Nigel S	Los Gatos	CA		
Chase; Matthew W.	Belmont	CA		
Trimbur; Donald	Redwood City	CA		

US-CL-CURRENT: 435/158; 435/232, 530/350, 536/23.1, 536/23.2, 536/23.7

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15. Document ID: US 6025184 A

L9: Entry 15 of 19

File: USPT

Feb 15, 2000

US-PAT-NO: 6025184

DOCUMENT-IDENTIFIER: US 6025184 A

TITLE: Bioconversion of a fermentable carbon source to 1,3-propanediol by a single microorganism

DATE-ISSUED: February 15, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Laffend; Lisa Anne	Wilmington	DE		
Nagarajan; Vasantha	Wilmington	DE		
Nakamura; Charles Edwin	Claymont	DE		

16. Document ID: US 6013494 A

L9: Entry 16 of 19

File: USPT

Jan 11, 2000

US-PAT-NO: 6013494

DOCUMENT-IDENTIFIER: US 6013494 A

TITLE: Method for the production of 1,3-propanediol by recombinant microorganisms

DATE-ISSUED: January 11, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Nakamura; Charles E.	Claymont	DE		
Gatenby; Anthony A.	Wilmington	DE		
Hsu; Amy Kuang-Hua	Redwood City	CA		
La Reau; Richard D.	Mountain View	CA		
Haynie; Sharon L.	Philadelphia	PA		
Diaz-Torres; Maria	San Mateo	CA		
Trimbur; Donald E.	Redwood City	CA		
Whited; Gregory M.	Belmont	CA		
Nagarajan; Vasantha	Wilmington	DE		
Payne; Mark S.	Wilmington	DE		
Picataggio; Stephen K.	Landenberg	PA		
Nair; Ramesh V.	Wilmington	DE		

17. Document ID: US 5686276 A

L9: Entry 17 of 19

File: USPT

Nov 11, 1997

US-PAT-NO: 5686276

DOCUMENT-IDENTIFIER: US 5686276 A

TITLE: Bioconversion of a fermentable carbon source to 1,3-propanediol by a single microorganism

DATE-ISSUED: November 11, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Laffend; Lisa Anne	Wilmington	DE		
Nagarajan; Vasantha	Wilmington	DE		
Nakamura; Charles Edwin	Claymont	DE		

□ 18. Document ID: EP 1586647 A1, WO 200112833 A2, BR 200013315 A, EP 1204755 A2, KR 2002059364 A, US 6514733 B1, CN 1379818 A, JP 2003507022 W, US 20030157674 A1, MX 2002001712 A1

L9: Entry 18 of 19

File: DWPI

Oct 19, 2005

DERWENT-ACC-NO: 2001-307889

DERWENT-WEEK: 200568

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TITLE: Novel nucleic acid fragment encoding a non-specific catalytic activity for the bioconversion of 3-hydroxypropionaldehyde to 1,3-propanediol

INVENTOR: EMPTAGE, M; HAYNIE, S ; LAFFEND, L ; PUCCI, J ; WHITED, G ; HAYNIE, S L ; LAFFEND, L A ; PUCCI, J P ; WHITED, G M

PRIORITY-DATA: 1999US-149534P (August 18, 1999), 2000US-0641652 (August 18, 2000), 2002US-0277249 (October 21, 2002)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
<u>EP 1586647 A1</u>	October 19, 2005	E	000	C12N015/52
<u>WO 200112833 A2</u>	February 22, 2001	E	109	C12P007/00
<u>BR 200013315 A</u>	April 2, 2002		000	C12P007/00
<u>EP 1204755 A2</u>	May 15, 2002	E	000	C12N015/52
<u>KR 2002059364 A</u>	July 12, 2002		000	C12N015/52
<u>US 6514733 B1</u>	February 4, 2003		000	C12P007/02
<u>CN 1379818 A</u>	November 13, 2002		000	C12N015/52
<u>JP 2003507022 W</u>	February 25, 2003		147	C12P007/00
<u>US 20030157674 A1</u>	August 21, 2003		000	C12P007/18
<u>MX 2002001712 A1</u>	April 1, 2003		000	C12P007/00

INT-CL (IPC): C07 H 21/04; C12 N 1/16; C12 N 1/18; C12 N 1/20; C12 N 1/21; C12 N 9/02; C12 N 9/04; C12 N 15/20; C12 N 15/52; C12 N 15/70; C12 N 15/74; C12 P 7/00; C12 P 7/02; C12 P 7/18; C12 P 21/02; C12 N 1/21; C12 R 1:19; C12 N 1/21; C12 R 1:19

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□ 19. Document ID: US 2688008 A

L9: Entry 19 of 19

File: USOC

Aug 31, 1954

US-PAT-NO: 2688008

DOCUMENT-IDENTIFIER: US 2688008 A

TITLE: Mixed acrylonitrile polymers

DATE-ISSUED: August 31, 1954

INVENTOR-NAME: CHANEY DAVID W; HOXIE HOWARD M

US-CL-CURRENT: 525/203, 264/182, 525/154, 525/157, 525/167, 525/175, 525/176, 525/183, 525/212, 525/221, 525/222, 525/238, 525/916, 526/265

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Documents

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Search Results - Record(s) 1 through 1 of 1 returned.

1. Document ID: US 20030082756 A1

L5: Entry 1 of 1

File: PGPB

May 1, 2003

PGPUB-DOCUMENT-NUMBER: 20030082756

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030082756 A1

TITLE: 1,3-propanediol and polymer derivatives from a fermentable carbon source

PUBLICATION-DATE: May 1, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Burch, Robert R.	Exton	PA	US
Dorsch, Robert R.	Hockessin	DE	US
<u>Laffend, Lisa Anne</u>	Claymont	DE	US
<u>Nagarajan, Vasantha</u>	Wilmington	DE	US
<u>Nakamura, Charles</u>	Claymont	DE	US

US-CL-CURRENT: 435/158; 528/271, 568/852

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